Appointment

From: Imhoff, Robert [imhoff.robert@epa.gov]
Sent: 6/19/2020 6:29:13 PM
To: Verhalen, Frances [verhalen.frances@epa.gov]
CC: Casso, Ruben [Casso.Ruben@epa.gov]; Diem, Art [Diem.Art@epa.gov]; Imhoff, Robert [imhoff.robert@epa.gov]; Shappley, Ned [Shappley.Ned@epa.gov]; Smith, Darcie [Smith.Darcie@epa.gov]; Palma, Ted [Palma.Ted@epa.gov]; Feldman, Michael [Feldman.Michael@epa.gov]

Subject: Accepted: Denka modeling discussion
Attachments: Denka Network Assessment.pptx; Comparison of Modeled and Observed 2016-18.pptx
Location: Microsoft Teams Meeting

Start: 6/23/2020 4:00:00 PM
End: 6/23/2020 5:00:00 PM
Show Time As: Busy

Frances,

I've attached a couple of additional presentations that may help address the representativeness of the SPOD monitoring relative to the Community monitoring.

- Denka Network Assessment.pptx looks at the community monitoring site locations' suitability as SPOD sampling locations
    - Angles to sources
    - Relative concentrations
    - Location map with modeled isopleths
    - Sites ranked by their likelihood of detecting events and for their ability to distinguish individual sources
- Comparison of Modeled and Observed 2016-18 shows statistical analysis of the observed and modeled concentration frequency distributions and performs a rough mass balance estimate for the relative emission rates from known routine emissions, unknown routine emissions, and episodic emissions.
    - The statistical analysis finds that about 2/3 of the dose after the installation of the RTO comes from 10% of the days (a perfect SPOD system could capture most of the dose with much less sampling)
    - Because of the deviation of the frequency distribution from log-normal, the analysis indicates that significant episodic emissions were detected on about 10% of the sampled days.
    - The mass balance indicates that the daily emission rate during episodic emissions is about 4X the modeled post-RTO emission rate.
    - The model vs observation analysis finds that
        - > 80% of the modeled dose occurs during the nighttime hours
        - Comparison with monitored distribution indicates that about ½ of the days have impacts from sources not included in the modeling, with 10% of the days having more than ½ of the daily maximum concentration due to unknown sources.

-Best regards,
Bob